

52. (new) A method of treating amyotrophic lateral sclerosis comprising systemic administration of a pharmaceutical composition comprising an adenovirus vector comprising a nucleic acid encoding a neurotrophic factor.

53. (new) The method according to claim 52, wherein the adenovirus comprises an expression cassette comprising a nucleic acid encoding a neurotrophic factor under the control of a transcriptional promoter.

54. (new) The method according to claim 52, wherein the adenovirus comprises two expression cassettes, wherein each cassette comprises a nucleic acid encoding a different neurotrophic factor under the control of a transcriptional promoter.

55. (new) The method according to claim 52, wherein the adenovirus comprises an expression cassette comprising two nucleic acids encoding a different neurotrophic factor under the control of a single transcriptional promoter.

56. (new) The method according to claim 53, wherein the neurotrophic factor is GDNF, CNTF, BDNF or NT3.

57. (new) The method according to claim 54, wherein the neurotrophic factors are selected from GDNF, CNTF, BDNF and NT3.

58. (new) The method according to claim 57, wherein the neurotrophic factors are CNTF and GDNF.

59. (new) The method according to claim 53, wherein the promoter is a constitutive eucaryotic or viral promoter.

60. (new) The method according to claim 59, wherein the promoter is selected from a CMV, RSV, or adenovirus promoter.

61. (new) The method according to claim 52, wherein the systemic administration comprises intravenous administration.

62. (new) The method according to claim 54, wherein the expression cassettes enable simultaneous expression of the neurotrophic factors.

63. (new) The method according to claim 52, further comprising administering riluzole.

64. (new) A pharmaceutical composition comprising two adenovirus vectors, wherein each vector comprises a nucleic acid encoding a different neurotrophic factor.

65. (new) The pharmaceutical composition according to claim 64, wherein the vectors comprise a cassette enabling simultaneous expression of two different neurotrophic factors.

66. (new) The pharmaceutical composition according to claim 64, wherein the neurotrophic factors are selected from GDNF, BDNF, CNTF and NT3.

67. (new) The pharmaceutical composition according to claim 66, wherein the adenovirus vectors comprise two replication defective recombinant adenoviruses, and wherein one adenovirus comprises a nucleic acid encoding CNTF and one adenovirus comprises a nucleic acid encoding GDNF.

68. (new) The pharmaceutical composition according to claim 66, wherein the adenovirus vectors comprise two replication defective recombinant adenoviruses, and wherein one adenovirus comprises a nucleic acid encoding GDNF and one adenovirus comprises a nucleic acid encoding NT3.

69. (new) The pharmaceutical composition according to claim 66, wherein the adenovirus vectors comprise two replication defective recombinant adenoviruses, and wherein one adenovirus comprises a nucleic acid encoding BDNF and one adenovirus comprises a nucleic acid encoding NT3.

70. (new) The pharmaceutical composition according to claim 64, in an injectable form.

71. (new) The pharmaceutical composition according to claim 64, further comprising riluzole.

72. (new) The pharmaceutical composition according to claim 71, in an injectable form.

73. (new) The pharmaceutical composition of claim 64, wherein one of the neurotrophic factors is CNTF.

74. (new) The pharmaceutical composition of claim 64, wherein one of the neurotrophic factors is BDNF.

75. (new) The pharmaceutical composition of claim 64, wherein at least one adenovirus vector is a replication defective recombinant adenovirus.